

Claims

- [c1] A tool for removing a friction-fit or press-fit component from a seat, comprising:
 - a hand-held, pneumatically-driven hammer for applying a repeating percussive force; and
 - a coupling for interconnecting the hammer and the component;wherein the repeating percussive force is applied to the component thereby urging the component from the seat.
- [c2] The tool of claim 1 wherein the hammer comprises a tool body comprising an anvil and enclosing a piston, and the piston strikes the anvil to apply the percussive force to the tool body.
- [c3] The tool of claim 1 wherein the coupling interconnects the tool body and the component.
- [c4] The tool of claim 1 and further comprising a spring adapted to urge the piston away from the anvil after the application of the percussive force.
- [c5] The tool of claim 1 wherein the coupling comprises a tool holder, a coupling adapter, and a rod puller, and the coupling adapter is adapted to transfer the percussive force from the tool holder to the rod puller.
- [c6] The tool of claim 5 wherein the coupling adapter is adapted to

enable the rod puller to translate relative to the tool holder.

[c7] The tool of claim 1 wherein the coupling comprises a sleeve adapted to slidably communicate with an exterior surface of the hammer and fixedly retain the hammer therein.

[c8] The tool of claim 1 and further comprising a pulling bit attached to the hammer and adapted to apply the percussive force to the component.

[c9] The tool of claim 1 wherein the coupling is attached to a forward end of the hammer.

[c10] The tool of claim 1 wherein the coupling is attached to a rearward end of the hammer.

[c11] The tool of claim 1 and further comprising a cap having an anvil attached to the hammer for transmitting a percussive force applied to the anvil through the hammer to the component.

[c12] An adapter for converting an air hammer with a reciprocating member into a tool for removing a friction-fit or press-fit component from a seat, comprising:
a pull rod adapted to be attached to the component; and
a hammer piece attached to the reciprocating member and adapted to percussively communicate with the pull rod;
wherein the reciprocating member imparts a reciprocating

motion to the hammer piece so that a repeating percussive force is applied to the pull rod by the hammer piece thereby urging the component from the seat.

- [c13] The adapter of claim 12 wherein the coupling interconnects the tool body and the component.
- [c14] The adapter of claim 12 and further comprising a spring adapted to urge the piston away from the anvil after the application of the percussive force.
- [c15] The adapter of claim 12 wherein the coupling comprises a tool holder, a coupling adapter, and a rod puller, and the coupling adapter is adapted to transfer the percussive force from the tool holder to the rod puller.
- [c16] The adapter of claim 15 wherein the coupling adapter is adapted to enable the rod puller to translate relative to the tool holder.
- [c17] The adapter of claim 12 wherein the coupling comprises a sleeve adapted to slidably communicate with an exterior surface of the hammer and fixedly retain the hammer therein.
- [c18] The adapter of claim 12 and further comprising a pulling bit attached to the hammer and adapted to apply the percussive force to the component.
- [c19] A method for removing a friction-fit or press-fit component

from a seat, comprising:

fixedly coupling a pull rod to the component so that an impact force delivered to the pull rod will be transmitted to the component;

fixedly coupling the pull rod to a hand-held, pneumatically-driven hammer adapted to apply a repeating percussive force to the pull rod; and

activating the hammer to apply a repeating percussive force to the pull rod, and thereby urge the component from the seat.

[c20] The method of claim 19 and further comprising the step of replacing a hammer bit with a cap, wherein the cap is adapted to transmit a percussive force applied thereto to the hammer.

[c21] The method of claim 19 and further comprising the step of replacing the hammer bit with a pulling bit, wherein the pulling bit is adapted to transmit the percussive force from the hammer to the component.

[c22] The method of claim 19 and further comprising the step of coupling the pull rod to a rear portion of the pneumatically-driven hammer.

[c23] A kit for converting an air hammer into a tool for removing a friction-fit or press-fit component from a seat, the air hammer comprising a body and a reciprocating member, the kit comprising:

a pull rod attached to the component; and
a pulling member attached to the air hammer and adapted to
percussively communicate with the pull rod.

[c24] The kit of claim 23 wherein the reciprocating member is
operably interconnected with the component.

[c25] The kit of claim 23 wherein the air hammer body is operably
interconnected with the component.

[c26] The kit of claim 23 and further comprising a coupling
comprising a tool holder, and a coupling adapter, and the
coupling adapter is adapted to transfer the percussive force
from the tool holder to the pull rod.

[c27] The kit of claim 26 wherein the coupling adapter is adapted to
enable the pull rod to translate relative to the tool holder.

[c28] The kit of claim 26 wherein the coupling comprises a sleeve
adapted to slidably communicate with the body of the hammer
and fixedly retain the hammer therein.

[c29] The kit of claim 26 wherein the coupling is attached to a
forward end of the hammer.

[c30] The kit of claim 26 wherein the coupling is attached to a
rearward end of the hammer.

[c31] The kit of claim 23 and further comprising a cap having an
anvil attached to the hammer for transmitting a percussive

force applied to the anvil through the hammer body to the component.

- [c32] A hand-held, pneumatically-driven hammer, comprising:
 - a body having a mounting portion at a rear portion of the hammer, the mounting portion being adapted to fixedly couple a component thereto, the component being frictionally retained in a component seat;
 - whereby the hammer is thereby adapted to convert the hammer into a tool puller for removing the component from the component seat.
- [c33] The hammer of claim 32 wherein the mounting portion is coupled to the component through a pull rod.
- [c34] The hammer of claim 32 wherein the mounting portion comprises threads adapted for threadable connection with the component.
- [c35] The hammer of claim 32 wherein the mounting portion comprises a bayonet-type connection.
- [c36] The hammer of claim 32 wherein the mounting portion comprises a collar and at least one set screw.